REMARKS

Claims 1-3 are presently pending. For clarity, Claim 1 is amended to delineate the steps of the claimed method, including the step of mixing powdered α-Mn with Al powder. Support for this amendment is found in the Specification as published in US 2005/0120829 at paragraph [0013], for example. Claims 1 and 3 are amended with minor grammatical changes. No new matter has been added herewith. The following addresses the substance of the Office Action.

Comments

The applicants have amended claim 1, changing "a chemical purity of 99.7 wt%" to "a chemical purity of 99.7%", as suggested by the Examiner.

Regarding the percentage of the content of fine Mn powder with a size of less than 100 microns as recited in claim 1, it is no more than 15% by volume (not by weight).

Claim Rejections under 35 U.S.C. § 103(a)

Claims 1 and 2 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Dremann et al. (US 4,171,215). In particular, the Examiner stated that, because claim 1 (of Dremann) does not limit the manganese powder to a β-manganese powder, the manganese powder of Dremann meets the limitation of claim 1. However, the compositions and methods of Dremann et al. require the use of β-Mn. Amended Claim 1 of the present application recites a starting mixture of powdered α-Mn and Al only (i.e., it does not contain β-Mn). Thus, the claims distinguish over Dremann et al. since they do not include the use of β-Mn.

The Specification discloses the use of α-Mn, the most common form of manganese, because it describes the use of electrolytic manganese without describing any special temperature treatment to yield any form other than the α allotrope. Dremann et al. notes at column 2, lines 5-6 that electrolytic manganese, which is normally α manganese, has heretofore been used. Dremann et al. purposely heat α-Mn to convert it to β-Mn, a key aspect of their claimed invention. Referring to the attached online descriptions of manganese, it is commonly known that the alpha allotrope is stable at room temperature whereas the beta and gamma allotropes are not (refer to text marked by arrows in right margins). In agreement with Dremann et al., α-Mn must be heated to between 1305-1990°F (approximately 700-1100°C) to be transformed to the

β-allotrope. Since no such heating treatment step is disclosed in the present application, it is apparent to one of ordinary skill in the art that α-manganese was used.

The Examiner noted that the method of Dremann et al. starts with α-Mn. The applicants agree that Dremann et al. uses α-manganese as a starting material as reported in column 2, lines 5-9. However, referring to Tables II and III of Dremann et al., manganese recoveries are higher when employing β-manganese (Example 4) as compared to lower recoveries obtained when employing α-manganese (Examples 1-3). Dremann et al. concludes at column 4, lines 59-63 that "increased rate of solution and improved manganese recoveries are obtain[ed] with manganese aluminum briquettes according to this invention containing β-manganese." Moreover, Dremann et al. states at column 2, lines 12-17: "It was discovered that if the α-manganese presently used in manganese alloying additives were replaced by β-manganese, such additives dissolve considerably more rapidly and completely in a bath of molten aluminum and recoveries of manganese are considerably enhanced." In addition, the claims of Dremann et al. either explicitly recite the use of β-manganese or they describe a heating step that converts manganese to the β form. Thus, Dremann et al. teaches away from the use of α-manganese as claimed in the present application. Based on the teachings of Dremann et al. one of skill in the art would have used β-manganese to improve the dissolution rate of manganese in molten aluminium. Since a reference that teaches away from a claimed invention can not be used to support obviousness under 35 U.S.C. § 103(a), the Dremann et al. reference can not be used to support a prima facie case of obviousness in the present application.

Secondly, the Examiner stated that the highest Mn concentration of Dremann et al. is equal to the lowest claimed concentration, thereby establishing a prima facie case of obviousness. It is true that Dremann et al. recites compacts that contain from about 50-90% β-Mn at column 3, lines 23-24. However, as discussed above, amended Claim 1 distinguishes over Dremann et al. by virtue of the use of α-Mn, not β-Mn.

Thirdly, Examiner stated that the Al particle size distribution and percentage of fine Mn particles with a size of less than 100 mm are result-effective variables and that it would have been obvious to one skilled in the art to have optimized the result-effective variables in the process of Dremann et al. However, the applicants have not simply optimized the process of

Dremann et al. since the use of α-Mn in the present application distinguishes over the use of β-Mn by Dremann et al.

Claim 3 was rejected over Dremann et al. (US 4,171,215) in view of JP 59-004999. In particular, the Examiner stated that JP 59-004999 teaches controlling powder supply through a detector and control circuit in order to suppress the fluctuation of the powder supply, which reads on the claimed feature of monitoring the mix level of the Mn and Al. As discussed above, the claim amendments presented herein distinguish over Dremann et al. because α-Mn is used in the present application, as opposed to the use of β-Mn as disclosed by Dremann et al. The applicants agree with the Examiner that JP 59-004999 discloses the monitoring of the amount of powder to be supplied to the press. However, JP 59-004999does not specify the kind of powder to be pressed and it does not disclose the use of α-Mn. Consequently, the JP 59-004999 reference can not be combined with Dremann et al. to support a case of prima facie obviousness.

In light of the above claim amendments and Remarks, Claims 1-4 are believed to be in compliance with 35 U.S.C. § 103(a). Accordingly, the Applicants respectfully request removal of the rejections.

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, the Applicants are not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. The Applicants reserve the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that the Applicants have made any disclaimers or disavowals of any subject matter supported by the present application.

CONCLUSION

In view of Applicants' amendments to the Claims and the foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: January 25, 2008

By: Karoline A. Delaney

Karoline A. Delaney
Registration No. 44,058
Agent of Record
Customer No. 20995
(949) 760-0404

4771790
011708